

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 15 AUG 2005


PCT

Applicant's or agent's file reference 04 LG 16 E	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/EP2004/005559	International filing date (day/month/year) 21.05.2004	Priority date (day/month/year) 22.07.2003	
International Patent Classification (IPC) or national classification and IPC A61K31/375, A61K31/10			
Applicant POLICHEM SA et al.			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
 - a. ☒ sent to the applicant and to the International Bureau a total of 2 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 02.02.2005	Date of completion of this report 11.08.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Veronese, A Telephone No. +49 89 2399-7824



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/005559

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-12 as originally filed

Claims, Numbers

1-16 received on 02.02.2005 with letter of 31.12.2004

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/005559

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-16
	No: Claims	
Inventive step (IS)	Yes: Claims	1-16
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/EP2004/005559

Re Item V.

Reference is made to the following documents; unless otherwise indicated, reference is made to the relevant passages emphasized in the Search Report:

- D1: PATENT ABSTRACTS OF JAPAN vol. 2000, no. 09, 13 October 2000 & JP 2000 169370 A (FRONTIER:KK), 20 June 2000.
- D2: PATENT ABSTRACTS OF JAPAN vol. 013, no. 372 (C-627), 17 August 1989 & JP 01 125306 A (DAIICHI SEIMO KK), 17 May 1989.
- D3: EP-A-1 153 605 (ROSS MICHAEL A) 14 November 2001.
- D4: US-A-4 229 430 (FAHIM MOSTAFA S ET AL) 21 October 1980.
- D5: US-A-5 631 001 (HARICH JAKOB ET AL) 20 May 1997.
- D6: DE 299 00 513 U (RST ICKING GMBH) 10 August 2000.
- D7: DATABASE WPI Section Ch, Week 200064 Derwent Publications Ltd., London, GB; Class D21, AN 2000-663199 XP002266917 & RU 2 150 935 C (UNIV MOSC MED STOMATOLOGY), 20 June 2000.
- D8: DATABASE WPI Section Ch, Week 200301 Derwent Publications Ltd., London, GB; Class B06, AN 2003-002680 XP002266918 'Antifungal medicinal preparation contains copper(I) oxide, elemental copper and optionally trace elements and ascorbic acid ' & HU 200 004 976 A (VARGA A), 28 October 2002.
- D9: FORTIS A A ET AL: 'Adherence of Staphylococcus aureus, Klebsiella pneumoniae and Candida albicans to human buccal epithelial cells, from healthy persons and HIV carriers, under the influence of Broncho Vaxom in vitro and ascorbic acid in vivo.' APMIS: ACTA PATHOLOGICA, MICROBIOLOGICA, ET IMMUNOLOGICA SCANDINAVICA. DENMARK APR 1998, vol. 106, no. 4, April 1998, pages 441-448, XP009023968.

The following documents were filed by the applicant during preliminary examination:

D10: Vagi-C, product information leaflet, December 2003

D11: Eiko Petersen, Gyne, March 19, 1998

Novelty (Art.33(2) PCT)

The use of ascorbic acid for the treatment of fungal infections has been disclosed in the

prior art documents D1-D9. However, no one of these documents discloses the treatment or the prevention of vaginal fungal infections. The claimed subject matter is therefore new in the sense of Art.33(2) PCT.

Inventive step (Art.33(3) PCT)

The problem underlying the subject matter claimed in the present application is the provision of a medicament for the treatment of vaginal fungal infections.

The use of ascorbic for the treatment of fungal infections has been disclosed in the prior art (see D1-D9 and refer to the passages of these documents mentioned in the search report).

The claimed invention differs from the prior art in that it is directed to vaginal fungal infections.

The applicants have filed two documents (D10 and D11) which state that ascorbic acid is not to be administered in case of vaginal fungal infections, since the acid pH produced by ascorbic acid may promote fungal growth. Considering the teaching of these documents, a skilled person would not use a composition comprising ascorbic acid to treat or prevent vaginal fungal infections.

The application discloses experimental data showing that the underlying technical problem has been solved. In view of the evidence provided by the applicant, the subject matter of claims 1-16 appears to involve an inventive step in the sense of Art.33(3) PCT.

Industrial Application

The subject matter of claims 1-16 is industrially applicable.

02.02.2005

(65)

CLAIMS

1. The use of ascorbic acid or of a physiologically acceptable salt thereof for the preparation of a formulation for the prevention and treatment of vaginal fungal infections, wherein said formulation is administered after completion of the standard treatment against bacterial, fungal or protozoarian infections.
2. The use according to claim 1, wherein said formulation is administered after completion of a standard treatment with one or more antimicrobial agents.
3. The use according to any of the preceding claims, wherein said antimicrobial agents are selected from the classes of antibacteric/antibiotics, antitrichomonas, and/or antifungal agents.
4. The use according to any of the preceding claims, wherein said antimicrobial agents are selected from miconazole and metronidazole.
5. The use according to any of the preceding claims, wherein said formulation has a content in ascorbic acid from 0.1 to 25%, with respect to the total weight of the formulation.
6. The use according to claim 5, wherein said formulation has a content in acid ascorbic from 0.5 to 15%, preferably from 1.0 to 10%, with respect to the total weight of the formulation
7. The use according to any of the preceding claims, wherein said fungal infection is a recurrence.
8. The use according to any of the preceding claims, wherein said fungal infection is a superinfection.

9. The use according to any of the preceding claims, wherein said fungal infections are caused by *Candida albicans*.
10. The use according to any of the preceding claims, wherein said fungal infection are caused by *Dermatophytes*.
11. The use according to any of the preceding claims, wherein said formulation is for topical application.
12. The use according to any of the preceding claims, wherein ascorbic acid is the only active ingredient contained in the formulation.
13. The use according to any of the preceding claims, wherein said formulation includes customary excipients and or adjuvants.
14. The use according to any of the preceding claims, wherein ascorbic acid is contained in the formulation in unitary dosages suitable for its application from 10 to 500 mg/day.
15. The use according to any of the preceding claims, wherein said formulation is in a form suitable for application to external genitals, scalp, intertriginous areas, or for insertion into the vagina, or for mouthwashes.
16. The use according to any of the preceding claims, wherein said formulation includes: cream, ointment, gel, lotion or foam for either skin or vaginal application; moreover tablets, pessaries, capsules for vaginal application; possible forms for delayed melting, intended to prolonged release of active principle; collutorium for mouthwashes.